(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 9 March 2006 (09.03.2006)

(10) International Publication Number WO 2006/025849 A3

(51) International Patent Classification: H01S 3/08 (2006.01)

(21) International Application Number:

PCT/US2005/001891

(22) International Filing Date: 21 January 2005 (21.01.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/481,924 20 January 2004 (20.01.2004) US 60/573,406 24 May 2004 (24.05.2004) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

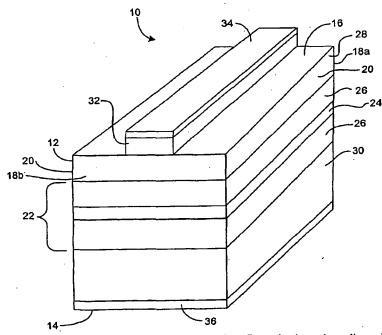
US 60/481,924 (CON)
Filed on 20 January 2004 (20.01.2004)
US 60/573,406 (CON)
Filed on 24 May 2004 (24.05.2004)

(71) Applicant (for all designated States except US): TRUMPF PHOTONICS, INC. [US/US]; 2601 U.S. Rte. 130 S, Cranbury, NJ 08512 (US). (72) Inventors; and

- (75) Inventors/Applicants (for US only): CHARACHE, Greg [US/US]; 2 Hawthorne Lane, East Windsor, NJ 08520 (US). CONNOLLY, John, Charles [US/US]; 2 Wright Court, Clarksburg, NJ 08510 (US).
- (74) Agent: BABINEAU, James, W.; Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110-2804 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AF, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: HIGH-POWER SEMICONDUCTOR LASER



(57) Abstract: A light source includes a semiconductor diode laser, and a reflector having a three-dimensional pattern of refractive index variations within the reflector. The reflector is in optical communication with the semiconductor diode laser and is aligned with an output beam of the diode laser, such that a portion of the light in the output beam is reflected back into the laser by the reflector.

/025849 A3

WO 2006/025849 A3

GQ, GW, ML, MR, NE, SN, TD, TG).

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, (88) Date of publication of the international search report: 1 June 2006

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(19) World Intellectual Property Organization International Bureau



| COLICE | C

(43) International Publication Date 9 March 2006 (09.03.2006)

(10) International Publication Number. WO 2006/025849 A2

(51) International Patent Classification:

Not classified

(21) International Application Number:

PCT/US2005/001891

(22) International Filing Date: 21 January 2005 (21.01.2005)

(25) Filing Language:

(26) Publication Language:

(30) Priority Data:

English

60/481,924 60/573,406

20 January 2004 (20.01.2004)

24 May 2004 (24.05.2004) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US Filed on US

60/481,924 (CON)

20 January 2004 (20.01.2004) 60/573,406 (CON)

Filed on

24 May 2004 (24.05.2004)

(71) Applicant (for all designated States except US): TRUMPF PHOTONICS, INC. [US/US]; 2601 U.S. Rte. 130 S, Cranbury, NJ 08512 (US).

(72) Inventors; and

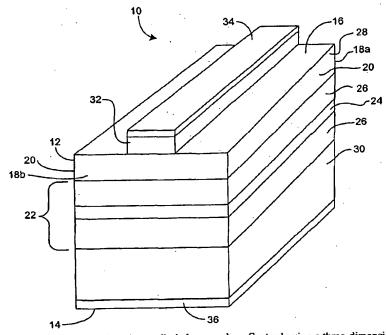
(75) Inventors/Applicants. (for US only): CHARACHE,

Greg [US/US]; 2 Hawthorne Lane, East Windsor, NJ 08520 (US). CONNOLLY, John, Charles [US/US]; 2 Wright Court, Clarksburg, NJ 08510 (US).

- (74) Agent: BABINEAU, James, W.; Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110-2804 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: HIGH-POWER SEMICONDUCTOR LASER



(57) Abstract: A light source includes a semiconductor diode laser, and a reflector having a three-dimensional pattern of refractive index variations within the reflector. The reflector is in optical communication with the semiconductor diode laser and is aligned with an output beam of the diode laser, such that a portion of the light in the output beam is reflected back into the laser by the reflector.

WO 2006/025849 A2



Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.